REMARKS

This application has been carefully reviewed in light of the Office Action dated July 5, 2001. Claims 1, 4 to 16, 19 to 21 and 30 to 35 are in the application, with Claims 3, 7, 18 and 22 having been cancelled. Claims 1, 5, 9 to 11, 16, 24 to 26 and 30 to 35 have been amended. Claims 1, 16 and 30 to 35 are the independent claims. Reconsideration and further examination are respectfully requested.

Claims 1, 4, 5, 10, 11, 14 to 16, 19, 20, 25, 26 and 29 to 35 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent 5,467,434 (Hower). Claims 6 and 21 were rejected under 35 U.S.C. § 103(a) over Hower in view of U.S. Patent 6,088,120 (Shibusawa), Claims 3, 7, 8, 12, 13, 18, 22, 23, 27 and 28 were rejected under § 103(a) over Hower in view of U.S. Patent 5,287,194 (Lobiondo), and Claims 9 and 24 were rejected under § 103(a) over Hower in view of U.S. Patent 5,859,711 (Barry). Reconsideration and withdrawal of the rejections are respectfully requested.

The present invention concerns selection of an image output apparatus from among a plurality of image output apparatuses based on first data designated by an operator and second data associated with each of the image output apparatuses. According to the invention, an operator designates first data, such as printing in a shortest time. Based on the first data, and second data associated with each of the image output apparatuses, such as a time required for each of the apparatuses to print one page, and a number of print jobs waiting to be printed by each apparatus (i.e., jobs that have not been output yet), an appropriate image output apparatus is selected that can execute the output job in the

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shortest time. As a result, one of the plurality of image output apparatuses can be selected that can output the job in the shortest time.

Referring specifically to the claims, amended independent Claim 1 is a data processing apparatus having connection means for being connected to a plurality of image output apparatuses, comprising first obtaining means for obtaining first data associated with an image output job, the first data being designated by an operator, second obtaining means for obtaining second data associated with each of the plurality of image output apparatuses, selection means for selecting an image output apparatus, based on the first data and the second data, from the plurality of image output apparatuses, and job assigning means for assigning the image output job to the image output apparatus selected by the selection means, wherein, in a case where the first data designated by the operator designates to select an image output apparatus which completes execution of the image output job in a shortest time, the selection means selects an image output apparatus from among the plurality of image output apparatuses which can perform an output operation in the shortest time based on second data for each of the respective image output apparatuses which indicates a time required by each of the image output apparatuses to output one page of an output job, and a number of pages for output jobs in each of the image output apparatuses which have not yet been output.

Amended independent Claims 16, 32 and 33 are method, memory medium and computer program claims, respectively, that substantially correspond to Claim 1.

Amended independent Claim 30 is similar in scope to Claim 1, but omits the assigning means, and Amended independent Claims 31, 34 and 35 are method, memory

medium and computer program claims, respectively, that substantially correspond to Claim 30.

The applied art, alone or in combination, is not seen to disclose or to suggest the features of independent Claims 1, 16 and 30 to 35. More specifically, the applied art is not seen to disclose or to suggest at least the feature of selecting an image output apparatus from among a plurality of image output apparatuses based on data which indicates a time required by each of the image output apparatuses to output one page of an output job, and a number of pages for output jobs in each of the image output apparatuses which have not yet been output.

Hower is seen to disclose a plurality of printers connected to a network with printer property profiles stored in advance. The property profiles comprise the printers media type, color capabilities, etc. When a user selects a combination of printing options, an examiner searches the printer profiles to determine one of the printers on the network that matches all of the selected combination. If a match is not found, a failure message is returned to the user. Hower is not seen to disclose that properties relating to speed of printing for each of the printers is contained in the properties profile. In addition, Hower merely examines the properties profile and does not determine a number of pages for print jobs pending for any of its printers. Accordingly, Hower is not seen to disclose or to suggest at least the feature of selecting an image output apparatus from among a plurality of image output apparatuses based on data which indicates a time required by each of the image output apparatuses to output one page of an output job, and a number of pages for output jobs in each of the image output apparatuses which have not yet been output.

Moreover, in Hower's system, if an exact match is not found for all of the properties selected by the user, a failure message is returned. That is, the requested print job can not be completed. However, in the present invention, at least one of the plurality of printers will always be selected since the selection is based on a time required to print one page and a number of output jobs that have not yet been printed, properties that will also match the operator's selection of a shortest time to execute the job.

Shibusawa is seen to disclose managing a plurality of physical printers connected to a network by forming a table of attributes of the physical printers in a the form of a logical printer. However, nowhere is Shibusawa seen to disclose that any attribute corresponds to a time required for a printer to print one page, or an attribute corresponding to a number of pages for output jobs yet to be printed. Accordingly, Shibusawa is also not seen to disclose or to suggest at least the feature of selecting an image output apparatus from among a plurality of image output apparatuses based on data which indicates a time required by each of the image output apparatuses to output one page of an output job, and a number of pages for output jobs in each of the image output apparatuses which have not yet been output.

Lobiondo is seen to disclose allocating a print job to one or more printers based on a selected completion time. According to the patent, a scheduler 50 that examines a print queue of a selected printer. If the queue is relatively empty, i.e., has only one or a few small jobs, the scheduler can allocate the job to the selected printer and inform the user of where the job was scheduled and when completion is expected. If a large number of jobs, or a large single job, are in the selected print queue, the scheduler 50 will
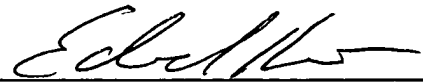
prompt the user that the print queue is backed up and will have a completion time which is not in the near future. The user may then enter through the user interface a request to utilize a different printer, enter a required completion time and have the scheduler 50 allocate the job to one or more available printers, or choose the selected full print queue if printing is desired at the specific location selected and completion time is not important. (See column 5, lines 15 to 33.) Thus, Lobiondo merely checks to see if a selected printer can complete the job in the selected time based on the number of jobs in the queue, and if not, allocates part of the job to one printer and another part of the job to a different printer. Lobiondo is not however, seen to disclose or to suggest at least the feature of selecting an image output apparatus from among a plurality of image output apparatuses based on data which indicates a time required by each of the image output apparatuses to output one page of an output job, and a number of pages for output jobs in each of the image output apparatuses which have not yet been output.

Barry is not seen to add anything to overcome the deficiencies of Hower, Shibusawa, and Lobiondo and is also not seen to disclose or to suggest at least the feature of selecting an image output apparatus from among a plurality of image output apparatuses based on data which indicates a time required by each of the image output apparatuses to output one page of an output job, and a number of pages for output jobs in each of the image output apparatuses which have not yet been output.

In view of the foregoing amendments and remarks, the entire application is believed to be in condition for allowance and such action is respectfully requested at the Examiner's earliest convenience.

Applicant's undersigned attorney may be reached in our Costa Mesa, California office at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE TO CLAIMS

1. (Three Times Amended) A data processing apparatus having connection

means for being connected to a plurality of image output apparatuses, comprising:

first obtaining means for obtaining first data associated with an image output job,

the first data being designated by an operator;

[limiting means for limiting the first data which can be designated by the

operator;]

second obtaining means for obtaining second data associated with each of the

plurality of image output apparatuses [from the image output job, the second data not being

designated by the operator];

selection means for selecting an image output apparatus, based on the first data

and the second data, from the plurality of image output apparatuses; and

job assigning means for assigning the image output job to the image output

apparatus selected by said selection means,

[wherein the first data is limited by the limiting means so that the selection means

selects at least one of the plurality of image output apparatuses each time an image output job is

to be output]

wherein, in a case where the first data designated by the operator designates to

select an image output apparatus which completes execution of the image output job in a shortest

time, said selection means selects an image output apparatus from among the plurality of image

output apparatuses which can perform an output operation in the shortest time based on second

data for each of the respective image output apparatuses which indicates a time required by each

of the image output apparatuses to output one page of an output job, and a number of pages for

output jobs in each of the image output apparatuses which have not yet been output.

3. (Canceled)

5. (Twice Amended) The data processing apparatus according to claim 4,

wherein said confirmation means confirms the function of each of the plurality of image output

apparatuses by referring to a memory which stores, in advance, data indicative of the function of

each of the plurality of image output apparatuses connected by said connection means.

7. (Canceled)

9. (Three Times Amended) The data processing apparatus according to claim 1,

wherein in a case where the first data further designates to select an image output apparatus

capable of a color image output, said selection means confirms a function of each of the plurality

of image output apparatuses connected by said connection means and selects an image output

apparatus which can perform the color image output.

10. (Three Times Amended) The data processing apparatus according to claim 1, wherein in a case where the first data _further_ designates to select an image output apparatus capable of printing on both sides of a recording medium, said selection means confirms a function of each of the plurality of image output apparatuses connected by said connection means and selects an image output apparatus which can perform the printing on both sides of the recording medium.

11. (Three Times Amended) The data processing apparatus according to claim 1, wherein in a case where the first data _further_ designates a size of an output image, said selection means confirms a function of each of the plurality of image output apparatuses connected by said connection means and selects an image output apparatus which can perform an output operation in the designated size.

16. (Three Times Amended) A data processing method for executing an image output job by selecting one of a plurality of image output apparatuses, comprising the steps of:

obtaining first data associated with an image output job, the first data being designated by an operator;

[limiting the first data which can be designated by the operator;]

obtaining second data _associated with each of the plurality of image output apparatuses_ [from the image output job, the second data not being designated by the operator];

selecting an image output apparatus, based on the first and second data, from the

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plurality of image output apparatuses; and

assigning the image output job to the image output apparatus selected in said

selecting step,

[wherein the first data is limited so that the selecting step selects at least one of

the plurality of image output apparatuses each time an image output job is to be output]

wherein, in a case where the first data designated by the operator designates to

select an image output apparatus which completes execution of the image output job in a shortest

time, said selecting step selects an image output apparatus from among the plurality of image

output apparatuses which can perform an output operation in a shortest time based on second

data for each of the respective image output apparatuses which indicates a time required by each

of the image output apparatuses to output one page of an output job, and a number of pages for

output jobs in each of the image output apparatuses which have not yet been output.

18. (Canceled)

22. (Canceled)

24. (Three Times Amended) The data processing method according to claim 16,

wherein in a case where the first data further designates to select an image output apparatus

capable of a color image output, in said selecting step, a function of each of the image output

apparatuses is confirmed, and an image output apparatus which can perform the color image

output is selected.

25. (Three Times Amended) The data processing method according to claim 16,

wherein in a case where the first data further designates to select an image output apparatus

capable of printing on both sides of a recording medium, in said selecting step, a function of each

of the image output apparatuses is confirmed and an image output apparatus which can perform

the printing on both sides of the recording medium is selected.

26. (Three Times Amended) The data processing method according to claim 16,

wherein in a case where the first data further designates a size of an output image, in said

selecting step, function of each of the image output apparatuses is confirmed and an image output

apparatus which can perform an output operation in the designated size is selected.

30. (Three Times Amended) A data processing apparatus having connection

means for being connected to a plurality of image output apparatuses, comprising:

first obtaining means for obtaining first data associated with an image output job,

the first data being designated by an operator;

[limiting means for limiting the first data which can be designated by the

operator;]

second obtaining means for obtaining second data associated with each of the

plurality of image output apparatuses [from the image output job, the second data not being

designated by the operator]; and

selection means for selecting an image output apparatus, based on the first data and the second data, from the plurality of image output apparatuses,

[wherein the first data is limited by the limiting means so that the selecting means selects at least one of the plurality of image output apparatuses each time an image output job is to be output]

wherein, in a case where the first data designated by the operator designates to select an image output apparatus which completes execution of the image output job in a shortest time, said selection means selects an image output apparatus from among the plurality of image output apparatuses which can perform an output operation in a shortest time based on second data for each of the respective image output apparatuses which indicates a time required by each of the image output apparatuses to output one page of an output job, and a number of pages for output jobs in each of the image output apparatuses which have not yet been output.

31. (Three Times Amended) A data processing method for executing an image output job by selecting one of a plurality of image output apparatuses, comprising the steps of:

obtaining first data associated with an image output job, the first data being designated by an operator;

[limiting the first data which can be designated by the operator;]

obtaining second data associated with each of the plurality of image output apparatuses [from the image output job, the second data not being designated by the operator];

and

selecting an image output apparatus, based on the first and second data, from the

plurality of image output apparatuses,

[wherein the first data is limited so that the selecting step selects at least one of

the plurality of image output apparatuses each time an image output job is to be output]

wherein, in a case where the first data designated by the operator designates to

select an image output apparatus which completes execution of the image output job in a shortest

time, said selecting step selects an image output apparatus from among the plurality of image

output apparatuses which can perform an output operation in a shortest time based on second

data for each of the respective image output apparatuses which indicates a time required by each

of the image output apparatuses to output one page of an output job, and a number of pages for

output jobs in each of the image output apparatuses which have not yet been output.

32. (Three Times Amended) A memory medium storing program code for

controlling a data processing apparatus which includes connection means for being connected to

a plurality of image output apparatuses, the program code comprising the steps of:

obtaining first data associated with an image output job, the first data being

designated by an operator;

[limiting the first data which can be designated by the operator;]

obtaining second data [from the image output job, the second data] associated

with each of the plurality of image output apparatuses [not being designated by the operator;]

selecting an image output apparatus, based on the first and second data, from the plurality of image output apparatuses; and

assigning the image output job to the image output apparatus selected in said selecting step,

[wherein the first data is limited so that the selecting step selects at least one of the plurality of image output apparatuses each time an image output job is to be output

wherein, in a case where the first data designated by the operator designates to select an image output apparatus which completes execution of the image output job in a shortest time, said selecting step selects an image output apparatus from among the plurality of image output apparatuses which can perform an output operation in a shortest time based on second data for each of the respective image output apparatuses which indicates a time required by each of the image output apparatuses to output one page of an output job, and a number of pages for output jobs in each of the image output apparatuses which have not yet been output.

33. (Three Times Amended) A program for controlling a data processing apparatus having connection means for being connected to a plurality of image output apparatuses, the program comprising the steps of:

obtaining first data associated with an image output job, the first data being designated by an operator;

[limiting the first data which can be designated by the operator;]

obtaining second data [from the image output job, the second data] associated

with each of the plurality of image output apparatuses [not being designated by the operator];

selecting an image output apparatus, based on the first and second data, from the plurality of image output apparatuses; and

assigning the image output job to the image output apparatus selected in said selecting step,

[wherein the first data is limited so that the selecting step selects at least one of the plurality of image output apparatuses each time an image output job is to be output]

wherein, in a case where the first data designated by the operator designates to select an image output apparatus which completes execution of the image output job in a shortest time, said selecting step selects an image output apparatus from among the plurality of image output apparatuses which can perform an output operation in a shortest time based on second data for each of the respective image output apparatuses which indicates a time required by each of the image output apparatuses to output one page of an output job, and a number of pages for output jobs in each of the image output apparatuses which have not yet been output.

34. (Twice Amended) A memory medium storing program code for controlling a data processing apparatus which includes connection means for being connected to a plurality of image output apparatuses, the program comprising the steps of:

obtaining first data associated with an image output job, the first data being designated by an operator;

[limiting the first data which can be designated by the operator;]

obtaining second data [from the image output job, the second data] associated

with each of the plurality of image output apparatuses [not being designated by the operator]; and

selecting an image output apparatus, based on the first and second data, from the

plurality of image output apparatuses,

[wherein the first data is limited so that the selecting step select at least one of the

plurality of image output apparatuses each time an image output job is to be output]

wherein, in a case where the first data designated by the operator designates to

select an image output apparatus which completes execution of the image output job in a shortest

time, said selecting step selects an image output apparatus from among the plurality of image

output apparatuses which can perform an output operation in a shortest time based on second

data for each of the respective image output apparatuses which indicates a time required by each

of the image output apparatuses to output one page of an output job, and a number of pages for

output jobs in each of the image output apparatuses which have not yet been output.

35. (Three Times Amended) A program for controlling a data processing

apparatus having connection means for being connected to a plurality of image output

apparatuses, the program comprising the steps of:

obtaining first data associated with an image output job, the first data being

designated by an operator;

[limiting the first data which can be designated by the operator;]

obtaining second data [from the image output job, the second data] associated

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with each of the plurality of image output apparatuses [not being designated by the operator]; and

selecting an image output apparatus, based on the first and second data, from the

plurality of image output apparatuses,

[wherein the first data is limited so that the selecting step selects at least one of

the plurality of image output apparatuses each time an image output job is to be output]

wherein, in a case where the first data designated by the operator designates to

select an image output apparatus which completes execution of the image output job in a shortest

time, said selecting step selects an image output apparatus from among the plurality of image

output apparatuses which can perform an output operation in a shortest time based on second

data for each of the respective image output apparatuses which indicates a time required by each

of the image output apparatuses to output one page of an output job, and a number of pages for

output jobs in each of the image output apparatuses which have not yet been output.